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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,829	06/28/2001	Raja Krishnaswamy	MS174293.1	5228

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EXAMINER
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CHANKONG, DOHM

ART UNIT	PAPER NUMBER
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2152

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/12/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

4.8

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/893,829		KRISHNASWAMY ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Dohm Chankong		2152	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 January 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8, 10-15, 17-24, 26 and 27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) Claims 1-8, 10-15, 17-24, 26 and 27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1> This action is in response to Applicant's remarks, filed 1.2.2007. Claims 1-8, 10-15, 17-24, 26 and 27 are presented for further examination.

2> As a new grounds of rejection is introduced in this action, this is a non-final rejection.

### *Response to Arguments*

I. THE §112, FIRST PARAGRAPH REJECTION OF THE CLAIMS ARE MAINTAINED.

Applicant argues that the §112, first paragraph rejection of the claims for failing to comply with the enablement requirement is in error. At issue is the limitation of optimizing remote method call invocation using the process of machine learning which was rejected for lack of enablement. Applicant's arguments have been fully considered but they are not persuasive.

Applicant points to an example in the specification as support for the limitation. The example is directed to a proxy determining that a first inquiry to a first remote object takes 60 seconds. Desiring a faster response time, the proxy simply selects a second remote object and compares the average response times to determine how more optimal response times can be achieved. For the reasons discussed below, the Office asserts that this example fails to fully enable the limitation of optimizing remote method call invocation using machine learning.

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A. The full scope of the claims are not enabled by the specification.

The focus of the examination inquiry is whether everything within the scope of the claim is enabled. MPEP §2164.08. In other words, the only relevant concern should be whether the scope of enablement provided to one skilled in the art by the disclosure is commensurate with the scope of protection sought by the claims. Id.

Here, the claim is directed towards optimizing method call invocation utilizing machine learning during the preprocessing of the call. Thus, the scope of the claim includes all techniques of machine learning that could be utilized to optimize a method call. The single example in the disclosure on which Applicant relies for support cannot be considered to be fully enabling of a limitation that broadly claims use of machine learning in general.

Even if the cited example represents one instance of machine learning, it does not represent all examples of machine learning. Simply put, the one example provided in the disclosure is not commensurate with the scope of protection sought by the claims. Therefore, the full scope of the claims are not enabled by the specification, and the §112, first paragraph rejection is proper.

B. The one example does not teach one skilled in the art to use the invention without undue experimentation.

The specification must teach those skilled in the art how to make and use the full scope of the claimed invention without undue experimentation. Id. All that is necessary is that one skilled in the art be able to practice the claimed invention, given the level of knowledge and skill in the art. Id.

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Here, the example in the disclosure does not teach one skilled in the art to use the invention and therefore is non-enabling. Applicant's example is directed to a proxy that desires faster response times. If a first remote object does not provide the desired response time, the proxy selects a second remote object and compares the average response times to determine how more optimal response times can be achieved. In the Office's view, the step of "achieving more optimal response times" is crucial to the machine learning example. The specification however is silent as to how the proxy could achieve more optimal response times based on merely comparing response times between remote objects.

The implication of the step is that the proxy compares the response times from different remote objects and simply selects the remote object with the fastest response time. But the example is directed to achieving a specific response time (5 seconds). The specification does not teach one of ordinary skill in the art how to achieve the more optimal response time. Therefore, one would not have been able to make and use the full scope of the claimed invention ("machine learning") without undue experimentation.

## II. THIS ACTION INTRODUCES PRIOR ART REJECTIONS OF THE CLAIMS.

In view of the Applicant's remarks with respect to utilizing machine learning to optimize remote method call invocation and particularly the example relied upon by Applicant, this action introduces a new grounds of rejection based on prior art. Therefore, this is a non-final rejection to give Applicant's the opportunity to respond to these new rejections.

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III. THE APPLICANT'S AMENDMENT OF THE SPECIFICATION DOES NOT  
OVERCOME THE §101 REJECTION OF CLAIMS 14 AND 23.

In response to the §101 rejection of claims 14 and 23 set forth in the final rejection mailed on 3.13.2006, Applicant amended the specification, deleting the term "communication media." The specification still recites that "computer readable media can be any available media that can be accessed by the computer." The specification continues in discussing communication media that includes carrier waves or modulated data signals. Carrier waves and modulated data signals is currently not viewed as falling within a statutory category. Any data that is "on" a carrier wave fails to be structurally and functionally interconnected with the media in such a manner to enable any usefulness to be realized. Therefore, the amendment is not sufficient to overcome the §101 rejection because the specification can still be interpreted as covering non-statutory subject matter.

*Claim Rejections - 35 USC § 101*

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3> Claims 14 and 23 are rejected under 35 U.S.C §101 because the claimed inventions are directed towards non-statutory subject matter. See the section III above in the response to arguments and the final rejection, filed 3.13.2006.

*Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4> Claims 1-8, 10-15, 17-23 and 27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

See section I in response to arguments above and non-final rejection, filed 10.2.2006.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5> Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim 1 lacks proper antecedent basis: "the entity."

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject

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matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6> Claims 1-8 and 9-14 are rejected under 35 U.S.C §103(a) as being unpatentable over Arnold et al, U.S Patent No. 6,393,497 ["Arnold"], in view of Applicant's admitted prior art ["AAPA"], in further view of Clarke et al, U.S Patent Publication No. 2002/0035642 ["Clarke"].

7> As to claim 1, Arnold discloses a system for interacting with an object, the system comprising:

an application code generic proxy that receives an intercepted method call, invokes a method on the object, receives results from the object and passes results to the entity that generated the intercepted method call based at least in part on the intercepted method call operability of the application code generic proxy modified by the application code, the application code generic proxy performs proxy pre-processing to optimize remote method call invocation before invoking the method on the object [Figure 6 | Figure 7 «items 704, 705» | column 9 «lines 4-37»].

Arnold does not expressly disclose a method call interceptor or performing machine learning.

8> With respect to intercepting method calls and routing them to proxies, AAPA clearly discloses that such functionality is well known in the art [Applicant's specification, pg. 1 «lines 10-28»]. Since such functionality is well known and utilized



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in conventional systems, it would have been obvious to one of ordinary skill in the art to have reasonably inferred that Arnold's system also contains the similar functionality.

9> With respect to machine learning, Arnold clearly discloses performing preprocessing, including optimization of the invocation by caching previous requests [column 9 «lines 4-15»]. In the same field of invention, Clarke is directed to a client-server system with a proxy system in between [Figure 1]. The proxy utilizes machine learning in the step of preprocessing method calls from the client in order to optimize the invocation of the calls [0027 where : Clarke discloses that the proxy is adaptive in selecting appropriate servers with the proxy "learning over time which origin servers are most prone to overload"]].

It would have been obvious to one of ordinary skill in the art to incorporate Clarke's teachings of an adaptive proxy into Arnold's system. Clarke discloses that an adaptive proxy helps control network congestion over the network. Thus, one would have been motivated to modify Arnold's proxy to be adaptive to optimize network efficiency of handling requests over the network.

10> As to claim 2, Arnold discloses the object is located across a remote boundary [Figure 1 «item 606»].

11> As to claim 3, Arnold discloses the object is marshaled by reference [column 8 «lines 38-45»].

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12> As to claim 4, Arnold discloses the object is marshaled by value [column 9 «lines 10-15»].

13> As to claim 5, Arnold discloses populating a call information data store with information associated with the intercepted method call, the call information data store is accessible to the application code generic proxy [column 9 «lines 16-27»].

14> As to claim 6, Arnold discloses the call information data store is populated with at least one of: a method name and a class/interface defining method data [column 7 «lines 46-49» | column 9 «lines 59-66»].

15> As to claim 7, Arnold discloses the call information data store is a message object that be serialized and passed across a remote boundary [column 9 «lines 16-27»].

16> As to claim 8, Arnold discloses transferring control to a method in the application code generic proxy, the method in the application code generic proxy overrides a base class method defined in a base class object from which the application code generic proxy inherits [column 10 «lines 20-31»].

17> As to claim 10, Arnold discloses proxy preprocessing further comprises at least one of: transaction processing, object migration, monitoring remote method calls,

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caching local data, caching remote data, and controlling remote method call invocations [column 9 «lines 4-27»].

18> As to claim 11, Arnold discloses the application code generic proxy performing proxy post-processing after receiving the results from the object [Figure 7 «item 712»].

19> As to claim 12, Arnold discloses the proxy post-processing comprises at least one of transaction processing, monitoring remote method calls, caching local data, and controlling remote method call invocations [column 9 «lines 4-37»].

20> As to claim 13, Arnold discloses the proxy invoking the method on the object by invoking a method available in remoting infrastructure [column 10 «lines 20-32»].

21> As to claim 14, as it does not teach or further define over previously claimed limitations, it is rejected for at least the same reasons set forth for claim 1.

22> Claims 15 and 20-22 are rejected under 35 U.S.C §103(a) as being unpatentable over Colyer, U.S Patent No. 5,903,725, in view of Clarke.

23> Colyer was cited by Applicant in an IDS filed on 6.17.2002.

24> As to claim 15 Colyer discloses a method for interacting with an object, the method comprising:

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creating a base class proxy object [column 7 «lines 37-51» : parent class];

creating an application code generic proxy, the application code generic proxy inherits from the base class proxy object [column 7 «lines 37-51» | column 11 «lines 45-64»];

overriding a base class method defined in the base class, the overridden method receives an intercepted method call [column 3 «lines 1-11» | column 12 «lines 4-18»];

intercepting a method call on the object [column 3 «lines 1-11»];

routing the method call to the application code generic proxy [column 3 «line 61» to column 4 «line 44»];

invoking the method on the object [column 3 «line 53» to column 4 «line 25»];

receiving a first result from the object [column 3 «lines 44-59»]; and

returning a second result to the entity that generated the intercepted method call [column 3 «line 61» to column 4 «line 6»].

Colyer does not expressly disclose adapting the proxy functionality with the proxy performing pre-processing comprising transaction processing and machine learning.

25> In the same field of invention, Clarke is directed to a client-server system with a proxy system in between [Figure 1]. Clarke's proxy is adaptive in the sense that the proxy utilizes machine learning in the step of preprocessing method calls from the client in order to optimize the invocation of the calls [0027 where : Clarke discloses

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that the proxy is adaptive in selecting appropriate servers with the proxy “learning over time which origin servers are most prone to overload”].

It would have been obvious to one of ordinary skill in the art to incorporate Clarke’s teachings of an adaptive proxy into Colyer’s system. Clarke discloses that an adaptive proxy helps control network congestion over the network. Thus, one would have been motivated to modify Colyer’s proxy to be adaptive to optimize network efficiency of handling requests over the network.

26> As to claims 20-22, Colyer discloses the object is located across a remote boundary [Figure 4], the object is marshaled by reference [column 11 «lines 51-54»] and the object is marshaled by value [column 4 «lines 9-12»].

27> Claims 17-19, 23 and 27 are rejected under 35 U.S.C §103(a) as being unpatentable over Colyer and Clarke, in view of Arnold.

28> As to claim 17, Colyer does not disclose the preprocessing including load balancing, object migration, object persisting, monitoring remote method calls.

29> In the same field of invention, Arnold discloses a proxy performing preprocessing including object migration, monitoring remote method calls, caching local data, caching remote data, and controlling remote method call invocations [column 9 «lines 4-27»].

It would have been obvious to incorporate Arnold’s preprocessing steps into

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Colyer's proxy object. Arnold discloses that such steps improve network response to method call invocation. Thus, one would have been motivated to combine the references to improve upon Colyer's proxy for the reasons stated in Arnold.

30> As to claims 18 and 19, Colyer does not expressly disclose performing post-processing.

31> Arnold discloses the application code generic proxy performing proxy post-processing after receiving the results from the object [Figure 7 «item 712»], whereby the post processing includes transaction processing, monitoring remote method calls, caching local data, and controlling remote method call invocations [column 9 «lines 4-37»]. It would have been obvious to one of ordinary skill in the art to incorporate Arnold's post processing steps into Colyer's system to enable caching of objects which improves network response to method call invocation.

32> As to claims 23 and 27, as they do not teach or further define over the previously claimed limitations, they are rejected for at least the same reasons set forth for claims 15 and 17-19.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Bezviner et al, U.S Patent No. 5,613,148.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dohm Chankong whose telephone number is 571.272.3942. The examiner can normally be reached on Tuesday-Friday [7:30 AM to 4:30 PM].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571.272.3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DC



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